ABSTRACT:

The results of shear box and consolidation tests on electrokinetically-treated tropical residual soil are presented. Injections of selected chemicals (calcium chloride, aluminium chloride and phosphoric acid) into the soil samples at the anodes or cathodes were carried out in cylindrical electrokinetic cells via applications of 30 V DC electrical potential for 168 h. Four different open-anode and open-cathode electrokinetic systems utilising different anolytes and catholytes were employed to treat the soil samples. The shear resistances of the treated soil utilising distilled water as the anolyte and 1.0 mol/l phosphoric acid as the catholyte was enhanced, whereas the treated soil near the cathode showed significant reduction in compressibility. Soil treated utilising the other chemicals showed no significant changes.